

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-8 are now present in this application. Claim 1 is independent.

Reconsideration of this application is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Information Disclosure Citation

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statements filed on April 13, 2004 and March 22, 2005, and for providing Applicants with initialed copies of the PTO-1449 forms filed therewith.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 3 and 4 stand rejected under 35 USC §112, first paragraph, as failing to comply with the enablement requirement. This rejection is respectfully traversed.

Initially, Applicant respectfully submits that the Office Action does not make out a *prima facie* case of lack of enablement of the invention recited in claims 3 and 4.

An analysis of whether the claims under appeal are supported by an enabling disclosure

requires a determination of whether that disclosure contained sufficient information regarding the subject matter of the appealed claims so as to enable one skilled in the pertinent art to make and use the claimed invention. The test for enablement is whether one skilled in the art could make and use the claimed invention from the disclosure coupled with information known in the art without undue experimentation. *See United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988), cert. denied, 109 S.Ct. 19 54 (1989); *In re Stephens*, 529 F.2d 1343, 1345, 188 USPQ 659, 661 (CCPA 1976). As framed by our reviewing court, the dispositive issue with regard to the first paragraph rejection is whether the disclosure is sufficient to enable one of ordinary skill in the art to practice the claimed invention. *See Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

In order to make a rejection, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. *See In re Wright*, 999 F.2d 1557, 1561-2, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993) (Examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure). A disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 USC 112, first paragraph unless there is a reason for doubting the objective truths of the statements contained in the disclosure which must be relied on for enabling support. Assuming that sufficient reason for such doubt exists, a rejection for failure to

teach how to make or use will be proper on that basis. *See In re Marzocchi*, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971).

Once the Examiner has established a reasonable basis to question the enablement provided for the claimed invention, the burden falls on the Applicant to present persuasive arguments, supported by suitable proofs where necessary, that one skilled in the art would be able to make and use the claimed invention using the disclosure as a guide. *See In re Brandstadter*, 484 F.2d 1395, 1406, 179 USPQ 286, 294 (CCPA 1973). In making the determination of enablement, the Examiner shall consider the original disclosure and all evidence in the record, weighing evidence that supports enablement [the appellant may attempt to overcome the Examiner's doubt about enablement by pointing to details in the disclosure but may not add new matter. The appellant may also submit factual affidavits under 37 CFR 1.132 or cite references to show what one skilled in the art knew at the time of filing the application against evidence that the specification is not enabling.

Thus, the dispositive issue is whether the Applicant's disclosure, considering the level of skill in the art as of the date of the appellant's application, would have enabled a person of such skill to make and use the claimed invention without undue experimentation. The threshold step in resolving this issue is to determine whether the Examiner has met his burden of proof by advancing acceptable reasoning inconsistent with enablement.

Factors to be considered by an Examiner in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of guidance or direction presented, (3) the presence or absence of working examples, (4)

the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *See In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988), citing *Ex parte Formal*, 230 USPQ 546, 547 (Bd. Pat. App. & Int. 1986).

The Office Action asserts that it is not seen how one would determine the weight constants. The Office Action asserts that any value could be assigned to the weight constants, resulting in an infinite number of equations.

Applicants respectfully disagree with this assertion because what is recited is a simple linear equation stating that the estimated laundry amount equals the sum of (1) the product of a first weight constant and the computed average of the stored PWM values and (2) the product of a second weight constant and the washing machine motor's rotation angle. The weights are disclosed as being determined so that the estimated laundry amount is a specific amount, e.g., zero, when the estimated laundry amount is performed by driving the drum-type washing machine without a load.

The Office Action further asserts that, because there are two unknown constants, even if they result in zero, there is a lack of information presented to allow the calculation of both constants.

Applicants respectfully disagree with this conclusion because the equation in issue is a simple linear equation wherein if one arbitrary weight is selected, the second weight is easily determined by solving the simple linear equation.

Moreover, by merely providing the aforementioned speculative conclusions, the Office

Action fails to provide any objective factual evidence of record on which to base the asserted shortcomings of the disclosure, despite the fact that it is well settled that the Office must provide objective evidence of the basis used in a rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. *See In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Instead of providing objective factual evidence in support of its speculative assertions, the Examiner only presents the aforementioned speculative conclusions with no objective factual basis whatsoever. For this reason, the rejection is improper and should be withdrawn.

Additionally, the outstanding Office Action has not addressed the aforementioned “Wands” factors at all, despite the fact that the Manual of Patent Examining Procedure clearly points out that these factors are to be considered in a rejection based on lack of enablement – see MPEP §§703.03(c) and 2164.01 et seq. This failure is considered fatal to the merits of providing a *prima facie* basis for the rejection.

The Office Action fails to address specific “Wands” factors such as, for example, the amount of guidance or direction presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims.

Instead of addressing the Wands factors, the Office Action totally fails to take them into consideration, thereby denying Applicant the substantive and procedural due process to which he is entitled under the Administrative Procedures Act (see in this regard, *In re Zurko*, 119 S.Ct. 1816, 50 USPQ2d 1930 (1999), and *In re Gartside*, 53 USPQ2d 1769 (Fed. Cir. 2000)) and

failing to make out a *prima facie* case of lack of enablement.

Furthermore, Applicants respectfully submit that the art is extremely predictable and that the equation in issue is a simple linear equation that is easily solvable.

Accordingly, Applicants respectfully submit that this rejection fails to make out a *prima facie* case of lack of enablement for the claimed invention.

Reconsideration and withdrawal of this rejection of claims 3 and 4 under 35 USC 112, first paragraph, are respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,208,931 to Williams et al. ("Williams") in view of JP 05-003990 to Tatsuo and further in view of U.S. Patent 5,092,140 to Matsuo et al. (Matsuo) and further in view of U.S. Patent 6,460,381 to Yoshida et al. ("Yoshida). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole, "not just a few features of the claimed invention. Under 35 U.S.C. §103, " [a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under §103 is whether the claimed invention as a

whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the

desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the applicant to come forward to rebut such a case.

Applicants respectfully submit that this rejection is improper for a number of reasons.

Firstly, Williams supplies a minimum amount of energy to its motor so that its rotatable assembly (which includes the motor rotor, spin tub, and agitator) approximates a predetermined velocity, e.g., 40 rpm and, although it applies a PWM signal to its motor (as disclosed in its incorporated-by-reference U.S. Patent 4,857,814), Williams contains absolutely no disclosure of storing in memory a set of PWM values corresponding to the signal applied in the motor accelerating step, let alone storing such values by sensing a rotational speed of the motor, as recited. Nor does Williams output a PWM signal having a duty ratio of zero after a sensed motor speed reaches a target rotational speed. Nor does Williams compute an average of stored PWM values. In fact, because Williams does not disclose storing any such values, Williams is unable to compute the average of those non-stored values. Nor does Williams calculate a laundry estimation value based on the average of the stored PWM values and the motor's rotational angle.

Actually, Williams does something entirely different than what is claimed. Williams times how long it takes the motor to come to a stop after the motor is turned off and uses this value to determine the weight of the load in the washer (col. 5, lines 1-35). In other words, Williams operates to determine washer load in a fundamentally different manner than does the claimed invention.

In an attempt to remedy the fundamental differences between the claimed invention and Williams, the Office Action turns to three separate references and attempts to pluck different features from each without even attempting to explain why one of ordinary skill in the art would

be properly motivated to turn to these references to modify Williams, let alone to provide objective factual evidence of proper motivation for one of ordinary skill in the art to modify Williams, as suggested.

The first reference that the Office Action turns to is Tatsuo, and provides only an English language abstract of Tatsuo. In this regard, Applicants respectfully submit that the Office Action is limited to what is disclosed in the English language Abstract furnished to Applicants. See, in this regard, the unpublished decision by the USPTO Board of Patent Appeals and Interferences in Ex parte Jones, 62 USPQ2d 1206 (BdPatApp&Int 2001). Notwithstanding this fact, Applicants have downloaded an English language Abstract of Tatsuo from the Japanese Patent Office (JPO) Internet website and provide a copy thereof for the Examiner's consideration. According to the Abstract, Tatsuo uses its fuzzy controller to memorize and calculate the electric current furnished to the DC motor and is used as the data in fuzzy estimation for the quality and quantity of washed articles. Turning to the JPO-furnished English language translation of Tatsuo, paragraph [0012] states that a measurement means measures the amount of the washing from the energization current of the motor made to rotate a drum in a wash process, and a storage means is made to memorize it in the above configuration. In a dessication (drying) process, a drying-time setting means sets up the drying time corresponding to the amount memorized by the storage means. Tatsuo also discloses, in paragraph [0028] that the supply current to the DC motor (which is controlled by a PWM control unit 12', as stated in paragraph [0026]) is used as data when memorizing with a control unit MC, and calculating with a control unit MC, and carrying out fuzzy reasoning of the quality and amount of washing W in the fuzzy reasoning section in a control board.

Clearly, Tatsuo does not supply any of the aforementioned missing features of Williams including, for example, (1) storing in memory a set of PWM values corresponding to the signal applied in the motor accelerating step, (2) storing such values by sensing a rotational speed of the motor, (3) outputting a PWM signal having a duty ratio of zero after a sensed motor speed reaches a target rotational speed, (4) computing an average of stored PWM values, and (5) calculate a laundry estimation value based on the average of the stored PWM values and the motor's rotational angle.

In fact, Tatsuo does not even disclose memorizing PWM signals. All that Tatsuo discloses is memorizing "the supply current to the motor" and the term "supply current" clearly can be a single current amplitude value instead of the claimed set of PWM values. In this regard, reference is made to the aforementioned case law which clearly holds that for something to be inherently disclosed, it cannot be disclosed just as a possibility or even as a probability, but must necessarily be disclosed. It is clear that Tatsuo does not explicitly disclosed the claimed set of PWM values or of storing a set of PWM values, and neither does Tatsuo disclose these positively claimed features inherently, i.e., necessarily.

Moreover, the Office Action never states how Williams is to be modified by Tatsuo, not states why one of ordinary skill in the art would be properly motivated to modify Williams based on Tatsuo.

Furthermore, even if one of ordinary skill were properly motivated to turn to Tatsuo to modify Williams (which has not been shown in the Office Action), Williams modified by Tatsuo would not result in the claimed invention.

Additionally, Applicants respectfully submit that one of ordinary skill in the art would not be properly motivated to modify Williams in view of Tatsuo, because Williams has no need to use motor current to arrive at the weight of the washer load, that determination being based on the time it takes the rotation assembly to slow down to zero.

The Office Action then turns to Matsuo, whose main object of the invention is to provide a washing machine wherein the number of revolutions of the washing machine motor can be prevented from unstably oscillating repeatedly relative to the target number of revolutions in the process of controlling the motor. The Office Action states that Williams discloses measuring time, which is directly proportional to the number of revolutions that the motor makes during freewheeling, and that Matsuo discloses a revolution sensor 6a for detecting the number of revolutions at a predetermined applied voltage. Unfortunately, the Office Action stops here and completely fails to explain the relevance of these two statements to why the claimed invention is obvious, or to why one of ordinary skill in the art would be properly motivated to modify Williams in view of Matsuo, or what aspect of Williams is suggested to be modified by Matsuo, and why any modification of Williams in view of Matsuo would render the claimed invention obvious.

Moreover, Applicants respectfully submit that one of ordinary skill in the art would not be motivated to turn to Matsuo to modify Williams to include a rotation sensor because Williams does not need to use a rotation sensor to measure the washer load and does not appear to have the vibration problem which Matsuo addresses.

Then, the Office Action turns to Yoshida, which discloses use of a pressure sensor to determine laundry weight. Yoshida measures the output of the pressure sensor four times during a

rotation of the laundry tub 13, averages those four measurements and, based on the average, determines the weight of the laundry. Unfortunately, the Office Action stops here and completely fails to explain the relevance of Yoshida's pressure sensor measurement average to determine laundry weight to why the claimed invention is obvious, or to why one of ordinary skill in the art would be properly motivated to modify Williams in view of Yoshida, or what aspect of Williams is suggested to be modified by Yoshida.

Furthermore, even if one of ordinary skill were properly motivated to turn to Yoshida to modify Williams (which has not been shown in the Office Action), Williams modified by Yoshida would not result in the claimed invention.

Additionally, Applicants respectfully submit that one of ordinary skill in the art would not be properly motivated to modify Williams in view of Yoshida, because Williams has no need to use a pressure sensor or average pressure sensor measured values to arrive at the weight of the washer load, that determination being based on the time it takes the rotation assembly to slow down to zero.

The Office Action then addresses the features of claims 3 and 4, speculatively concluding that "one skilled in the art could multiply the measured values by arbitrary constants to get an interpretable result to compare to known data." In response to this, Applicants respectfully point out that the office's burden to make out a *prima facie* case of obviousness goes beyond merely stating what might be done, and includes provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or

implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art. Applicants note that case law which establishes these requirements is cited above.

Moreover, this statement that one skilled in the art could multiply the measured values by arbitrary constants to get an interpretable result to known data is inconsistent with, and undermines the rejection of claims 3 and 4 on the ground of lack of enablement.

Regarding claim 8, the Office Action states that it is well settled that determining optimum values of cause effective variables such as PWM cycle is within the skill of one practicing the art, citing In re Boesch, 205 USPQ 215 (CCPA 1980).

Applicants note that this statement has well recognized exceptions which have been clearly established by the very same court that decided the “Boesch” case. One such exception is where the results of optimizing a variable which was known to be result effective were exceptionally good. Another exception is where the parameter to be optimized was not recognized to be a result-effective variable. The rule and these exceptions are summarized in the later case of In re Antoine, 195 USPQ 6 (CCPA 1977).

Applicants respectfully submit that the present invention falls under one of the aforementioned exceptions to the rule. In particular, Applicants respectfully submit that none of the applied references discloses that the claimed features recited in claim 8 are result effective variables. Claim 8 depends from claim 1 and, thus, contains all the features of claim 1, including (1) accelerating a motor to a target rotational speed, by periodically applying to the motor a pulse width modulation (PWM) signal having a predetermined duty ratio; (2) storing in a memory a set of PWM values corresponding to the signal applied in said accelerating step, by sensing a rotational speed of the motor; (3) outputting a PWM signal having a duty ratio of zero, after the sensed motor speed reaches the target rotational speed, to allow the motor to freewheel to a stop; (4) computing an average of the stored PWM values; (5) measuring a rotational angle of the motor as the motor freewheels to a stop; and (6) calculating a laundry amount estimation value based on the average of the stored PWM values and the motor's rotational angle.

Applicants respectfully submit that none of the applied references, taken alone or in combination discloses this claimed combination of features regarding PWM values to be a result effective variable.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the invention recited in claims 1-8.

Reconsideration and withdrawal of this rejection of claims 1-8 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46, 472, at (703) 205-8000, in the Washington, D.C. area.

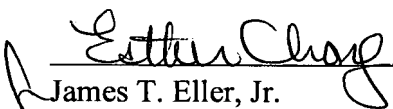
Prompt and favorable consideration of this Amendment is respectfully requested.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

Date: April 18, 2007

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Attachment: JPO English language computer translation of JP 05-003990